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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,393	11/02/2001	Masaya Ishida	9319S-000303	1032
27572	7590	08/09/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			TRINH, HOA B	
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BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

2814

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/002,393

Applicant(s)

ISHIDA ET AL.

Examiner

Vikki H. Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-47 is/are pending in the application.
- 4a) Of the above claim(s) 26-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-25, 41-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Acknowledgement**

Claims 18-25 and 41-47 are pending in this present application. Claims 26-40 have been withdrawn because the claims 26-40 are directed to a non-elected group. It is suggested that in response to this Office Action, applicant should cancel the claims 26-40.

### ***Claim Objections***

1. Claim 18 is objected to because of the following informalities: In claim 18, line 7, “the luminescent layer” lack antecedent basis. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 18, 20-22, 24, 41, and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Bao et al. (6,150,668) (hereinafter Bao).

With regard to claim 18, Bao discloses a thin film transistor, TFT, integrated with an organic light-emitting diode, OLED, (col. 4, line 44 to col. 9, line 35 and fig. 2) comprising an organic TFT 201 (fig. 2) including at least a active layer 230 made of organic material (col. 6, lines 48-58 and fig. 2), an organic electroluminescent element 202 (fig. 2) driven by the organic TFT (col. 1, lines 16-27 and fig. 2); an interlayer insulating film 240 (fig. 2) disposed between

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the organic thin film transistor 201 and the luminescent layer 245 (fig. 2) and the active layer 230 being disposed between a gate 215 (fig. 2) of the organic thin-film transistor 201 (fig. 2) and the interlayer-insulating film 240 (fig. 2).

As to claim 20, Bao discloses that the TFT 201 is provided between the substrate 205 and the OLED 202 (fig. 2).

With regard to claim 21, Bao discloses the total area of the source 225 and drain 226 regions is about being larger than an area with the luminescent layer 245 ( fig. 2).

With regard to claim 22, Bao discloses the source 19 (fig. 1) having a first part and a plurality of second parts projecting from the first part and drain region 19 (fig. 1) having a third part and a plurality of fourth parts projecting from the third part. (fig. 2)

As to claim 24, one of the plurality of second parts being sandwiched between two of the plurality of fourth parts (figs. 1-3).

With regard to claim 41, Bao discloses the active layer comprises an organic semiconductor film 235 made of pentacene (col. 6, line 64).

With regard to claim 45, Bao discloses a first electrode 216 (fig. 3) and a second electrode 235 (fig. 3) that sandwiches the luminescent layer 245 with the first electrode 216 (fig. 2).

As to claim 46, an area occupied by the first electrode 216 is larger than the area occupied by the luminescent layer 245 (fig. 2).

As to claim 47, the first electrode 216 has a cylindrical shape (fig. 2).

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*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 19, 23, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bao, as applied to claim 18 above.

With regard to claim 19 and 23, Bao does not disclose that the OLED element is provided between the substrate and the organic TFT, and that the gate is provided so as to cover the fourth parts and at least a part of the second parts and at least a part of the fourth parts.

However, the arrangement of the components of the device in different order can function in the same manner because the reversal of parts was held to have been obvious for a person having ordinary skill in the art. *In re Gazda* 104 USPQ 400 (CCPA 1955).

With regard to claim 43, Bao does not disclose the thickness of the light-emitting layer of about 80 nm. However, the thickness of about 80 nm is considered to involve routine optimization, which has been held to be within the level of ordinary skill in the art. As noted in the selection of reaction parameters such as the thickness.

*Normally, it is to be expected that a change in temperature, or in thickness, or in time, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art...such ranges are termed "critical ranges and the applicant has the burden of proving such criticality.... More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller* 105 USPQ233, 255 (CCPA 19553.

Therefore, one of ordinary skill in the requisite art at the time the invention was made would have used any thickness suitable to the method of the process in order to optimize the design.

With regard to claim 44, Bao et al. disclose the suitable semiconductor material for the

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light-emitting layer is fluorinated phthalocyanine (col. 7, lines 50-58), which is one of the polyfluorene family.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bao (US 6,150,668) in view of Liedenbaum et al. (US 6,054,725).

Bao discloses the invention substantially as claimed. However, Bao does not disclose a TFT including a spiral shape source and a spiral shape drain.. However, Liedenbaum et al. disclose a first and second electrodes are comb-shaped and arranged in the luminescent area facing each other at a predetermined spacing (Liedenbaum fig. 3). Liedenbaum et al. disclose the comb-shaped electrode could be an anisotropically scattering layer (Liedenbaum col. 3, lines 1 - 5). In fig. 5, Liedenbaum discloses a spiral source and a spiral drain . Bao et al. and Liedenbaum et al. have substantially the same environment of organic semiconductor device having electrodes arranged in source and drain layout. Therefore, it would have been obvious for the one with ordinary skill in the art to modify Bao's device with the teaching of Liedenbaum et al. to provide a source and drain electrodes in spiral shape in order to scatter the current anisotropically.

#### ***Response to Arguments***

6. Applicant's arguments filed 05/16/05 have been fully considered but they are not persuasive.

In the remarks, applicants argue that Bao does not disclose the newly added portion of claim 18 beginning with "insulating layer disposed between the organic TFT and the luminescent". As the examiner discussed, Bao does disclose each and every elements of claim

18. See rejection above. Therefore, dependent claims of claim 18 are also rejected. As to claim 24, Bao meets the amended portions as being anticipated under 35 USC 102 (e).

#### Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For



more information about the PAIR system, see <http://pair-direct.uspto.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application/publications will not be granted.

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PRIMARY EXAMINER